

Eastern Divide Insect and Disease Project Phase II

Wildlife Habitat and Successional Forests Report

Significant Issues

There are concerns about the lack of early successional habitat in the different project/activity areas, and the scarcity of advance oak regeneration. Also, the conversion of higher site index oak sites to non-oak species.

Scope of the Analysis

The geographic scope of environmental effects analysis on wildlife resources is based on the contiguous prescription areas being analyzed (Rx 7.E.2, Rx 8.A.1, and 9.A.1). The temporal bounds of this analysis include past management activities that have shaped current habitat conditions within the area, and any foreseeable future habitat management activities for the area. This project is based on the vegetation management objectives of the *Revised Land and Resource Management Plan Jefferson National Forest* (hereinafter referred to as the Forest Plan).

Dismal Area

8A1- Mix of Successional Habitats

Existing Conditions

A 12,106 acre contiguous area of Rx 8A1 on Flat Top Mountain and that includes acreage in the Dismal and Nobusiness Creek watersheds.

As shown in Table 1, the forested habitat (12,106 acres) in the project area is skewed to the older successional habitats; approximately 68 percent of the area is in late successional habitat (81 – 100 years) and there is currently 175 acres of existing early successional habitat (0 – 10 years) associated with active or sold timber sales in the NoBusiness Creek watershed. Approximately 16 percent of the area is within mid-successional habitat. In addition, approximately 11 percent of the area is older than 100 years. Existing open and semi-open habitats account for an additional 41 acres, or 0.3 percent, of the total Rx 8A1 area.

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Table 1. Existing Successional Habitats within Dismal Rx 8A1

Successional Habitat	Acres	Percent
Early (0-10 years)	175 *	1.5 %
Sapling/Pole (11-40 years)	281	2.3 %
Mid (41-80 years)	1,992	16.5 %
Late (81-100 years)	8,249	68.1 %
Old (> 100 years)	1,409	11.6 %
Total	12,106 acres	100 %

Rx 8A1 areas have four objectives which are to be used to measure how well management actions achieve the goals and desired conditions for this management prescription. Table 2 shows those objectives compared to the existing condition and the proposed action. It is the difference between what exists on the landscape today and what is described in the Forest Plan as the Desired Condition that forms the need for this proposal. The Proposed Action is based on conditions at the end of this entry period (10 years out).

Table 2. Dismal 8A1 Existing and Desired Conditions

8A1 Objective Number	Desired Condition	Existing Condition	Opportunity or Need (Desired – Existing)	Proposed Action
8A1-OBJ1	Maintain a minimum of 60% of the area > 40 years of age or a minimum of 7,239 acres across Rx area	11,650 Acres 97.0 %	Objective Met	11,108 Acres 92.0 %
8A1-OBJ2	Maintain a minimum of 20% of the area > 100 years of age or a minimum of 2,413 acres across Rx area	1,409 Acres 11.0 %	Objective Met	1,409 Acres 11.0 %
8A1-OBJ3	Maintain a minimum of 4% of the forested prescription area < 10 years old with openings \geq 2 acres in size or a minimum of 115 acres across Rx area	175 Acres 1.4 %	The existing early successional is currently being cut or is expected to in the near future.	717 Acres 6.0 %
8A1-OBJ4	Maintain an open road density \leq 1.25 miles per square mile	0.5/Mi. ²	Objective Met	0.5/Mi. ²

* NoBusiness Timber Sale 65 acres + Dings Branch Sale 111 acres = 175 acres

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Direct and Indirect Effects

There is currently 175 acres of existing early seral habitat associated with active or sold timber sales in the NoBusiness Creek watershed. With the harvest of an additional 16 units totaling about 542 acres, approximately 717 acres or six percent of the area would be 0 to 10 year old habitat within the next ten years. This would provide for patches of early seral forested habitat within the 8A1 Dismal project area. This would benefit early successional avian species, which are lacking appropriate habitat in larger patches within this 8A1 prescription area. Species that require a minimal area of disturbance that is greater than two acres would benefit the most from the treatments proposed under this alternative. Wildlife species such as ruffed grouse (*Bonasa umbellus*) and such neotropical migratory birds as the eastern towhee (*Pipilo erythrophthalmus*), yellow-breasted chat (*Icteria virens*), prairie warbler (*Setophaga discolor*), gray catbird (*Dumetella carolinensis*), and indigo bunting (*Passerina cyanea*) would benefit from the creation of additional early seral habitat (0 – 10 year age class).

Species requiring forest interior conditions, such as the ovenbird (*Seiurus aurocapilla*) and scarlet tanager (*Piranga olivacea*), would be displaced from harvest areas, but large areas of forest interior habitat comprise and adjoin the project area 8A1 prescription area. If the harvest is conducted during the breeding bird season, it is possible individual nests or fledglings of forest nesting bird species could be killed as a result of felling trees. However, local populations would not decline as a result of this level of harvesting. There are approximately 8,424 acres of 80 to 100 year old forested stands in this 12,106 acre project area. These species are considered common in mature oak stands on the Eastern Divide Ranger District.

Late successional and older forests provide quality primary and secondary wildlife habitat. Old growth provides the best cavity user potential habitat. Approximately 64 acres in six patches was inventoried as old growth during field survey work on Flat Top Mountain. These areas were primarily found in areas containing larger rock fields or lots of surface rock. None of these acres are identified for harvest.

Units 2, 3, and 4 are areas likely to convert to a non-oak forest after harvest. Thus, the basal area identified as the leave basal area should be comprised of healthy crowned oaks as well as high quality den trees, if available.

Temporary road construction will result in some amphibians, reptiles, small mammals, and insects within the construction zone being crushed by heavy equipment or buried by dirt from the blading of the existing unauthorized routes. In addition, some terrestrial or semi-aquatic species of salamanders, insects, reptiles, and small mammals within and adjacent to the harvest units may be directly impacted by heavy equipment use on skid roads.

Indirect impacts may occur to some terrestrial or semi-aquatic species of salamanders by the increased sunlight on the forest floor, causing it to dry out. This may affect food supplies and predation rates of/by some salamander and other predator species. Log ends and slash may improve ground cover habitat for some species.

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Site preparation activities (manual) would not be expected to have any effect on wildlife resources under this alternative with implementation of the management standards and guidelines and mitigation measures outlined in the Forest Plan. Important soft mast producers would be protected (Forestwide Standard FW-32).

Cumulative Effects

There would be short term impacts to mast production in areas harvested, but non-commercial and commercial timber treatments are designed to maintain long term mast production in the area.

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years. While it is difficult to predict what might occur on nearby private land, private lands comprise only a small amount of the watershed so are not likely to have any measurable effect on habitat conditions.

7E2- Dispersed Recreation Areas-Suitable

Existing Conditions

There is a 1,215 acre contiguous area of Rx 7E2 (Dispersed Recreation Areas – Suitable) associated with the White Cedar Horse Camp and trail system in the Dismal watershed. As shown in Table 3, the forested habitat (1,215 acres) in the project area is all above 40 years of age.

Table 3. Existing Successional Habitats within Dismal Rx 7E2

Successional Habitat	Acres	Percent
Early (0-10 years)	0	0.0 %
Sapling/Pole (11-40 years)	0	0.0 %
Mid (41-80 years)	825	68.0 %
Late (81-100 years)	390	32.0 %
Old (> 100 years)	0	0.0 %
Total	1,215 acres	100 %

Rx 7E2 areas have one objectives which is used to measure how well management actions achieve the goals and desired conditions for this management prescription. The objective is to maintain a minimum of four percent of the prescription area in early successional forest.

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Direct and Indirect Effects

There are currently no acres of existing early seral habitat within this area. With the harvest of three units totaling about 96 acres, approximately eight percent of the area would be 0 to 10 year old habitat within the next ten years. This would provide for patches of early seral forested habitat within the 7E2 Dismal project area. This would benefit early successional avian species, which are lacking appropriate habitat in larger patches within this 7E2 prescription area.

The direct and indirect effects would be similar to those identified above for the Dismal Area Rx 8 A1 area. There is no old growth within these stands or old stands in this area, but the protected riparian zones and the adjoining Rx 9F area will provide this component in the future.

Cumulative Effects

There would be short term impacts to mast production in areas harvested, but non-commercial and commercial timber treatments are designed to maintain long term mast production in the area.

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years. While it is difficult to predict what might occur on nearby private land, private lands comprise only a small amount of the watershed so are not likely to have any measurable effect on habitat conditions.

Gatewood/CaseKnife/Tunnel Hollow/ Peak Creek Area

9A1- Source Water Protection Watersheds

Existing Conditions

A 10,905 acre contiguous area of Rx 9A1 (Source Water Protection Areas) that is associated with the Gatewood Reservoir and the Indian Grave watershed which is a water source for the Town of Pulaski, Virginia.

Table 4. Existing Successional Habitats within Caseknife/Tunnel Hollow/Peak Creek Rx 9A1

Successional Habitat	Acres	Percent
Early (0-10 years)	135	1.2%
Sapling/Pole (11-40 years)	369	3.4 %
Mid (41-80 years)	1,720	15.8 %
Late (81-100 years)	3,868	35.5 %

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Old (> 100 years)	4,813	44.1 %
Total	10,905 acres	100 %

Rx 9A1 areas have one objective which is used to measure how well management actions achieve the goals and desired conditions for this management prescription. The objective is to maintain a Forest Service open road density at or below 1.0 miles per square mile (applies to National Forest System Roads only).

Direct and Indirect Effects

There is currently 135 acres of existing early seral habitat within this area associated with stand replacement burning that occurred in the Piney Mountain prescribed burn. With the harvest of 12 units totaling about 184 acres, the 0 to 10 component would be 2.9 percent. In addition, with more prescribed burning (5,000+ acres) proposed in the Tract Mountain area, it was estimated 80 acres could be regenerated through fire. The limit of 0 to 10 allowed in this prescription area is four percent, thus an additional five units in Tunnel Hollow is proposed, realizing all of it may not be cut, depending on actually layout acres of proposed units and the amount of actually regeneration that occurs as a result of prescribed burning. These would provide for patches of early seral forested habitat within the 9A1 project area. This would benefit early successional avian species, which are lacking appropriate habitat in larger patches within this 9A1 prescription area.

The direct and indirect effects would be similar to those identified above for the Dismal Area Rx 9A1 area. None of these stands are considered old growth, but it does exist adjacent to the units, and will be avoided in layout.

Cumulative Effects

There would be short term impacts to mast production in areas harvested, but non-commercial and commercial timber treatments are designed to maintain long term mast production in the area.

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years. While it is difficult to predict what might occur on nearby private land, private lands comprise only a small amount of the watershed so are not likely to have any measurable effect on habitat conditions.

8A1- Mix of Successional Habitats

Existing Conditions

A 1,373 acre area of Rx 8A1 associated with Pondlick and Lick Branch drainages. As shown in Table 5, the forested habitat in the project area is skewed to the older successional habitats; approximately 49

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

percent of the area is in late successional habitat (81 – 100 years) and there is currently no existing early successional habitat (0 – 10 years). Approximately 40 percent of the area is older than 100 years.

Table 5. Existing Successional Habitats within Gatewood Rx 8A1

Successional Habitat	Acres	Percent
Early (0-10 years)	0	0.0 %
Sapling/Pole (11-40 years)	56	4.1 %
Mid (41-80 years)	91	6.6 %
Late (81-100 years)	675	49.2 %
Old (> 100 years)	551	40.1 %
Total	1,373 acres	100 %

Rx 8A1 areas have four objectives which are to be used to measure how well management actions achieve the goals and desired conditions for this management prescription. Table 6 shows those objectives compared to the existing condition and the proposed action. It is the difference between what exists on the landscape today and what is described in the Forest Plan as the Desired Condition that forms the need for this proposal.

Table 6. Gatewood 8A1 Existing and Desired Conditions

8A1 Objective Number	Desired Condition	Existing Condition	Opportunity or Need (Desired – Existing)	Proposed Action
8A1-OBJ1	Maintain a minimum of 60% of the area > 40 years of age or a minimum of 823 acres across Rx area	1,317 Acres 96.0 %	Objective Met	11,108 Acres 92.0 %
8A1-OBJ2	Maintain a minimum of 20% of the area > 100 years of age or a minimum of 274 acres across Rx area	551 Acres 40.1 %	Objective Met	424 Acres 30.9 %
8A1-OBJ3	Maintain a minimum of 4% of the forested prescription area < 10 years old with openings \geq 2 acres in size or a minimum of 55 acres across Rx area	No Acres 0.0 %	Objective Met	127 Acres 9.2 %
8A1-OBJ4	Maintain an open road density \leq 1.25 miles per square mile	0.5/Mi. ²	Objective Met	0.5/Mi. ²

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Direct and Indirect Effects

With the harvest of four units totaling about 127 acres, approximately nine percent of the area would be 0 to 10 year old habitat within the next ten years. This would provide for patches of early seral forested habitat within the 8A1 project area. The effects would be similar to those identified in the Dismal 8A1 area.

Late successional and older forests provide quality primary and secondary wildlife habitat. Old growth provides the best cavity user potential habitat. The old growth inventory was refined during field survey work, and is very consistent with that determined from the 1935 aerial photography that was used for the initial inventory. These areas were primarily found in areas containing larger rock fields, lots of surface rock, or very steep slopes. None of these acres are identified for harvest.

Cumulative Effects

There would be short term impacts to mast production in areas harvested, but non-commercial and commercial timber treatments are designed to maintain long term mast production in the area.

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years. While it is difficult to predict what might occur on nearby private land, private lands comprise only a small amount of the watershed so are not likely to have any measurable effect on habitat conditions.

Bromley Hollow Area

8A1- Mix of Successional Habitats

Existing Conditions

A 1,995 acre area of Rx 8A1 associated with the Bromley Hollow Road on the south side of Big Walker Mountain, within the Little Walker watershed. As shown in Table 7, the forested habitat in the project area is skewed to the older successional habitats; approximately 43 percent of the area is in late successional habitat (81 – 100 years) and there is currently no existing early successional habitat (0 – 10 years). Approximately 20 percent of the area is older than 100 years.

Table 7. Existing Successional Habitats within Bromley Hollow Rx 8A1

Successional Habitat	Acres	Percent
Early (0-10 years)	0	0.0 %
Sapling/Pole (11-40 years)	363	18.2 %

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Successional Habitat	Acres	Percent
Mid (41-80 years)	365	18.2 %
Late (81-100 years)	859	43.1 %
Old (> 100 years)	408	20.5 %
Total	1,995 acres	100 %

Rx 8A1 areas have four objectives which are to be used to measure how well management actions achieve the goals and desired conditions for this management prescription. Table 8 shows those objectives compared to the existing condition and the proposed action. It is the difference between what exists on the landscape today and what is described in the Forest Plan as the Desired Condition that forms the need for this proposal.

Table 8. Bromley Hollow 8A1 Existing and Desired Conditions

8A1 Objective Number	Desired Condition	Existing Condition	Opportunity or Need (Desired – Existing)	Proposed Action
8A1-OBJ1	Maintain a minimum of 60% of the area > 40 years of age or a minimum of 1,197 acres across Rx area	1,632 Acres 82.0 %	Objective Met	1,484 Acres 92.0 %
8A1-OBJ2	Maintain a minimum of 20% of the area > 100 years of age or a minimum of 399 acres across Rx area	408 Acres 20.5 %	Objective Met	405 Acres 20.3 %
8A1-OBJ3	Maintain a minimum of 4% of the forested prescription area < 10 years old with openings \geq 2 acres in size or a minimum of 80 acres across Rx area	No Acres 0.0 %	Objective Met	148 Acres 7.4 %
8A1-OBJ4	Maintain an open road density \leq 1.25 miles per square mile	0.5/Mi. ²	Objective Met	0.5/Mi. ²

Direct and Indirect Effects

With the harvest of eight units totaling about 148 acres, approximately seven percent of the area would be 0 to 10 year old habitat within the next ten years. This would provide for patches of early seral forested habitat within the 8A1 project area. The effects would be similar to those identified in the Dismal 8A1 area.

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Late successional and older forests provide quality primary and secondary wildlife habitat. Old growth provides the best cavity user potential habitat. The old growth inventory for the area was and is being updated for this proposal. These areas were primarily found in areas containing larger rock fields or lots of surface rock. None of these acres are identified for harvest. One three acre area (within Unit 8) that had a plot that met the old growth criteria, but did not have enough trees per acre is proposed for harvest. The dominant white oak trees there are well over 130 years of age, and provide excellent primary and secondary cavity habitat.

Unit 7 contains a lot of yellow poplar, and is anticipated to be dominated by yellow poplar once regenerated. No advanced oak regeneration is present.

Cumulative Effects

There would be short term impacts to mast production in areas harvested, but non-commercial and commercial timber treatments are designed to maintain long term mast production in the area.

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years. While it is difficult to predict what might occur on nearby private land, private lands comprise only a small amount of the watershed so are not likely to have any measurable effect on habitat conditions.

Walker Mountain – Little Creek Area

8A1- Mix of Successional Habitats

Existing Conditions

A 966 acre area of Rx 8A1 associated with the south side of Big Walker Mountain from the I-77 tunnel east within the Little Walker watershed. As shown in Table x, the forested habitat in the project area is skewed to the older successional habitats; approximately 50 percent of the area is considered older than 100 years old and an additional 24 percent is in a late successional habitat (81 – 100 years) condition. In addition, there is currently no existing early successional habitat (0 – 10 years).

Table 9. Existing Successional Habitats within Walker Mountain Rx 8A1

Successional Habitat	Acres	Percent
Early (0-10 years)	0	0.0 %
Sapling/Pole (11-40 years)	79	8.2 %
Mid (41-80 years)	164	17.0 %
Late (81-100 years)	236	24.4 %

Eastern Divide Insect and Disease Project Phase II - Successional Forests Report

Successional Habitat	Acres	Percent
Old (> 100 years)	487	50.4 %
Total	966 acres	100 %

Rx 8A1 areas have four objectives which are to be used to measure how well management actions achieve the goals and desired conditions for this management prescription. Table 10 shows those objectives compared to the existing condition and the proposed action. It is the difference between what exists on the landscape today and what is described in the Forest Plan as the Desired Condition that forms the need for this proposal.

Table 10. Walker Mountain 8A1 Existing and Desired Conditions

8A1 Objective Number	Desired Condition	Existing Condition	Opportunity or Need (Desired – Existing)	Proposed Action
8A1-OBJ1	Maintain a minimum of 60% of the area > 40 years of age or a minimum of 580 acres across Rx area	887 Acres 92.0 %	Objective Met	858 Acres 89.0 %
8A1-OBJ2	Maintain a minimum of 20% of the area > 100 years of age or a minimum of 193 acres across Rx area	487 Acres 50.4 %	Objective Met	458 Acres 47.4 %
8A1-OBJ3	Maintain a minimum of 4% of the forested prescription area < 10 years old with openings \geq 2 acres in size or a minimum of 38 acres across Rx area	No Acres 0.0 %	Objective short of minimum desired	29 Acres 3.0 %
8A1-OBJ4	Maintain an open road density \leq 1.25 miles per square mile	0.5/Mi. ²	Objective Met	0.5/Mi. ²

Direct and Indirect Effects

With the harvest of two units totaling about 29 acres, approximately three percent of the area would be 0 to 10 year old habitat within the next ten years. This would provide for patches of early seral forested habitat within the 8A1 project area. The effects would be similar to those identified in the Dismal 8A1 area.

Cumulative Effects

No other vegetative management activities are planned on National Forest System lands in the analysis area for the next ten years.

Management Indicator Species

The effects of all alternatives upon management indicator species (MIS) associated with successional stages of forests would include the following:

Chestnut-sided warbler (*Setophaga pensylvanica*)

The habitat of this common migrant warbler is typically found in second-growth hardwoods and overgrown fields in the Appalachian Mountains in Virginia, over 2,500 feet in elevation. On the Forest it is therefore found in the Blue Ridge, Ridge and Valley, and Cumberland mountains. It is most numerous in abandoned fields with scattered saplings, along woodland edges, and in open park-like deciduous woods. It nests one to four feet above the ground in saplings and shrubs and feeds on insects gleaned from leaves and twigs in deciduous vegetation (Hamel, 1992). The chestnut-sided warbler is an MIS for high-elevation early-successional habitats because of its strong association with these habitats, and because its populations should be responsive to forest management efforts that create and sustain such habitats. Project area populations will benefit from this proposed action, as it will result in an additional 1,172 acres of early seral habitat being created.

Eastern towhee (*Pipilo erythrophthalmus*)

This common short distant migrant is typically found in early successional habitat. They nest in thickets or brushy places on the ground or in shrubs or saplings to five feet high (Hamel 1992). Eastern towhees require shrubs, saplings, or understory trees in a wide variety of situations, usually where a thicket is present. Populations respond favorably to conditions created three years following forest regeneration in larger forest patches (Thompson and Fritzell 1990). Towhees are common within early successional and brushy habitat found in the area. The towhee is an MIS for early-successional habitats because of its strong association with these habitats, and because its populations should be responsive to forest management efforts that create and sustain such habitats. Project area populations will benefit from this proposed action, as it will result in an additional 1,172 acres of early seral habitat being created.

Ovenbird (*Seiurus aurocapilla*)

Preferring mature, dry, deciduous hardwoods with a closed canopy, the ovenbird is an area sensitive MIS requiring relatively large undisturbed tracts. As ground nesters, they are especially vulnerable to predators. Breeding habitat is deciduous or mixed forest (rarely pure pine woods) with moderate understory, preferably in uplands. Minimum tract size is 37 acres, (Hamel 1992). It is common within the upland hardwood stands in the area. This species will be displaced from the regeneration harvest units. However, there is a large amount of forest interior habitat within the greater project area that can provide needed habitat. In addition, prescribed burning and other silvicultural treatments are not expected to impact local populations. Local populations are expected to decline for a 10 to 15 year period until the regeneration areas get older. On the Forest, overall total ovenbird populations are stable or increasing (USDA Forest Service, 2004).